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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,962	12/12/2003	Shingo Suzuki	91154	1311

24628 7590 06/15/2007  
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EXAMINER
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LE, HUYEN D

ART UNIT	PAPER NUMBER
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2615

MAIL DATE	DELIVERY MODE
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06/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/734,962

Applicant(s)

SUZUKI ET AL.

Examiner

HUYEN D. LE

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art (figures 3-4) as admitted by the Applicant in view of Azima et al. (U.S. patent 6,282,298).

Regarding claim 1, the admitted prior art (figures 3-4) teaches a microphone unit including a vibrating plate (10), a charge back plate (12), and a spacer (11). The microphone unit further includes a cylinder (20) and has a rear terminal hole (21) on the bottom of the other end of the cylinder, and an acoustic resistor (24) to cover the rear terminal hole (21). As shown in figures 3-4 and disclosed in the specification, a sheet of thermo-plastic porous material forms the acoustic resistor (24 and see page 2, lines 10-14 in the specification) and has air bubbles.

The admitted prior art lacks the teaching of the air bubbles of the thermoplastic porous material that are heated to obtain a desired acoustic resistance. However, providing the thermoplastic porous material being heated is known in the art.

Azima teaches the deformable materials that are heated for compressing or having variation of thickness (col. 3, lines 55-66).

Since the admitted prior art does teach the compressing the deformable material for adjusting the acoustic resistance or the quantity of airflow of the resistor (the sponge 24); it therefore would have been obvious to one skilled in the art to compress the deformable material (24) of the admitted prior art by heating, as taught by Azima, for the improved frequency characteristics and obtaining a desired acoustic resistance.

Regarding claim 2, the admitted prior art in view of Azima does not specifically teach the thermoplastic material as claimed. However, providing a polyurethane material for a foam or sponge is known in the art.

Since the admitted prior art does not restrict to any type of deformable material, it therefore would have been obvious to one skilled in the art to provide the polyurethane material for the acoustic resistor of the admitted prior art in view of Azima for an alternate choice.

Regarding claim 3, the admitted prior art in view of Azima does not specifically teach the acoustic resistor that is cut out from the heated mother sheet as claimed. However, it would have been obvious to one skilled in the art to provide the acoustic resistor (24) of the admitted prior art to be cut out from the heated mother sheet for better controlling and assembling a plurality of microphone units.

***Response to Arguments***

3. Applicant's arguments filed 1/22/07 have been fully considered but they are not persuasive.

Responding to the arguments about the limitations of the air bubbles of the sheet of thermo-plastic porous material being heated to obtain a desired acoustic resistance, the examiner refers to the Office Action. Further, the Applicant should note that the admitted prior art does teach the sound waves passing path is restricted by compressing the acoustic resistor (sponge 24), and the Azima teaches the variation of thickness of the deformable material (such as foam) is achievable by selective compression by controlled heating and application of pressure (col. 3, lines 63-66).

Therefore, it would have been obvious to one skilled in the art to compress the deformable material (24) of the admitted prior art by heating, as taught by Azima, for the improved frequency characteristics and obtaining a desired acoustic resistance.

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (571) 272-7502. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SINH TRAN can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HL  
June 10, 2007



HUYEN LE  
PRIMARY EXAMINER